

AMENDMENTS TO THE CLAIMS

Claim 1 (Cancelled).

2. (Currently Amended) The vehicle controller of claim [[1]] 23, wherein [[the]] a program for deleting the first security data and writing the new security data is stored in a non-rewritable memory.

3. (Currently Amended) The vehicle controller of claim [[1]] 23, wherein an anti-theft system is connected to the vehicle controller; and
wherein rewriting to the rewritable memory is permitted if the anti-theft system permits an operation as to the vehicle.

4. (Currently Amended) The vehicle controller of claim [[1]] 23, wherein the rewritable memory is implemented in any form of a flash memory, EPROM and EEPROM.

5. (Original) The vehicle controller of claim 2, wherein the rewritable memory and the non-rewritable memory are implemented in a single memory.

6. (Currently Amended) A rewriting device for rewriting a rewritable memory included in a vehicle controller, the rewriting device comprises;
a memory for storing new security data;
a communication means for transferring the new security data from the memory to write the new security data into the rewritable memory; and
wherein the new security data written in the rewritable memory is used to determine whether rewriting to the rewritable memory is permitted.

7. (Original) The rewriting device of claim 6, wherein the rewritable memory stores first security data that is used to determine whether rewriting to the rewritable memory is permitted; and

the rewriting device requests the vehicle controller to delete the first security data and write the transferred new security data into the rewritable memory.

8. (Original) The rewriting device of claim 6, further comprising an user interface that enables a user to create the new security data.

9. (Original) The rewriting device of claim 6, wherein the controller is further configured to assemble serial data blocks from the new security data; and
wherein the communication means transfers the serial data blocks via serial communication.

10. (Original) A memory rewriting system for a vehicle controller comprising:
a rewritable memory mounted on the vehicle controller, the rewritable memory storing first security data, the first security data being used to determine whether rewriting to the rewritable memory is permitted;
a rewriting device for transferring new security data to the vehicle controller; and
wherein the vehicle controller is configured to delete the first security data and to write the new security data into the rewritable memory.

11. (Currently Amended) The memory rewriting system of claim 10, wherein ~~[[the]]~~ a program for deleting the first security data and for writing the new security data is stored in a non-rewritable memory.

12. (Original) The memory rewriting system of claim 10, wherein the new security data is arbitrarily created using the rewriting device.

13. (Original) The memory rewriting system of claim 10, wherein an anti-theft system is connected to the vehicle controller; and
wherein rewriting to the rewritable memory is permitted if the anti-theft system permits an operation as to the vehicle.

14. (Original) The memory rewriting system of claim 10, wherein the rewriting device stores second security data; and the vehicle controller is configured to compare the first security data with the second security data transferred from the rewriting device, and to permit rewriting to the rewritable memory if the first security data matches the second security data.
15. (Currently Amended) The memory rewriting system of claim 10, wherein the first security data and the second security data have equivalent expressions ~~the same function~~; the rewriting device comprises a program to calculate a first function value for a number based on the function of the first security data; and the vehicle controller is configured to calculate a second function value for the number based on the function of the second security data, to compare the first function value with the second function value transferred from the rewriting device, and to permit the rewriting device to rewrite to the rewritable memory if the first function value is equal to the second function value.
16. (Original) The memory rewriting system of claim 15, wherein the number is generated from random numbers in the vehicle controller, and the number being transferred to the rewriting device from the vehicle controller.
17. (Original) The memory rewriting system of claim 10, wherein the new security data is transferred via serial communication.
18. (Original) A method for rewriting data stored in a rewritable memory in the vehicle controller, the method comprising;
receiving new security data transferred from an external rewriting device to the vehicle controller,
deleting first security data stored in the rewritable memory, the first security data being used to determine whether rewriting to the rewritable memory is permitted, and
writing the new security data into the rewritable memory.

19. (Original) The method of claim 18, the deleting the first security data and the writing the new security data are performed by a program stored in a non-rewritable memory mounted on the vehicle controller.

20. (Original) The method of claim 18, wherein an anti-theft system is connected to the vehicle controller, and

wherein rewriting to the rewritable memory is permitted if the anti-theft system permits an operation as to the vehicle.

21. (Original) The method of claim 18, wherein the rewriting device stores second security data; and

wherein the determination of the permission for rewriting to the rewritable memory comprising:

comparing the first security data with the second security data transferred from the rewriting device;

permitting rewriting to the rewritable memory if the first security data matches the second security data.

22. (Currently Amended) The method of claim 21, wherein the first security data and the second security data have equivalent expressions ~~the same function~~;

wherein the determination of the permission for rewriting to the rewritable memory comprising:

calculating a first function value for a number based on the function of the first security data in the vehicle controller;

calculating a second function value for the number based on the function of the second security data in the rewriting device;

comparing the first function value with the second function value; and

permitting the rewriting device to rewrite to the rewritable memory if the first function value is equal to the second function value.

23. (Previously Presented) A vehicle controller comprising,

a rewritable memory configured to store a security function used to authenticate an external rewriting device to determine whether rewriting to the rewritable memory by the external rewriting device is permitted;

a controller configured to initiate an authentication process to authenticate the external rewriting device using the security function in response to a request to rewrite data held by the rewritable memory and upon authenticating the external rewriting device to delete the security function stored in the rewritable memory and to write a new security function into the rewritable memory; and

an interface configured to receive and transmit one or more signals between the controller and the external rewriting device.

24. (New) A memory rewriting system for a vehicle controller comprising:

a vehicle controller comprising a rewritable memory, the rewritable memory storing second security data; and

a rewriting device for storing first security data,

wherein the vehicle controller is configured to;

determine whether there is a predetermined relationship between the first security data received from the rewriting device and the second security data stored in the rewritable memory;

release a security feature that prevents the rewritable memory from being rewritten if it is determined that there is the predetermined relationship therebetween;

delete the second security data after release of the security feature; and

write third security data received from the rewriting device, different from the first security data, into the rewritable memory,

the rewriting device being suitable for additionally storing the third security data.